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Development of Ecological Systems for Mapping Vegetation for the LANDFIRE Project in Alaska

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Mapping Characteristics

- **Map All Lands & Vegetative Communities**
  - Same level of detail
    - (Federal & Non-Federal lands)
    - Forestlands, Shrublands, and Grasslands
- **Repeatable**
  - Quick and affordable
- **Consistent for the Nation**
  - Map units mean the same thing in Florida as they do in Colorado

Map Unit Requirements

- ✓ **Identifiable**
  - from field or plot data
- ✓ **Map-able**
  - 30 meter resolution
  - LANDSAT data
- ✓ **Model-able**
  - provide required model inputs
- ✓ **Scalable**
  - link with existing classifications

LANDFIRE DELIVERABLES D-4

Vegetation Characteristics

Existing vegetation type (EVT), cover (EVC), and height (EVH)
Environmental Site Potential (ESP)
Bio-physical Settings (BpS)

Fire behavior

Fire behavior fuel models- 13
Fire behavior fuel models- 40
Canopy bulk density
Canopy base height
Canopy cover
Canopy height

Fire ecology

Historical fire return interval
Historical fire severity
Historical fire regime
Current Succession Class

Existing Vegetation (EVT)

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- Used directly for predicting current vegetation composition
- Augmented with canopy and height information
- Framework for mapping current fuel distribution and loadings
- Framework for mapping succession classes for use in departure mapping

Environmental Site Potential (ESP)

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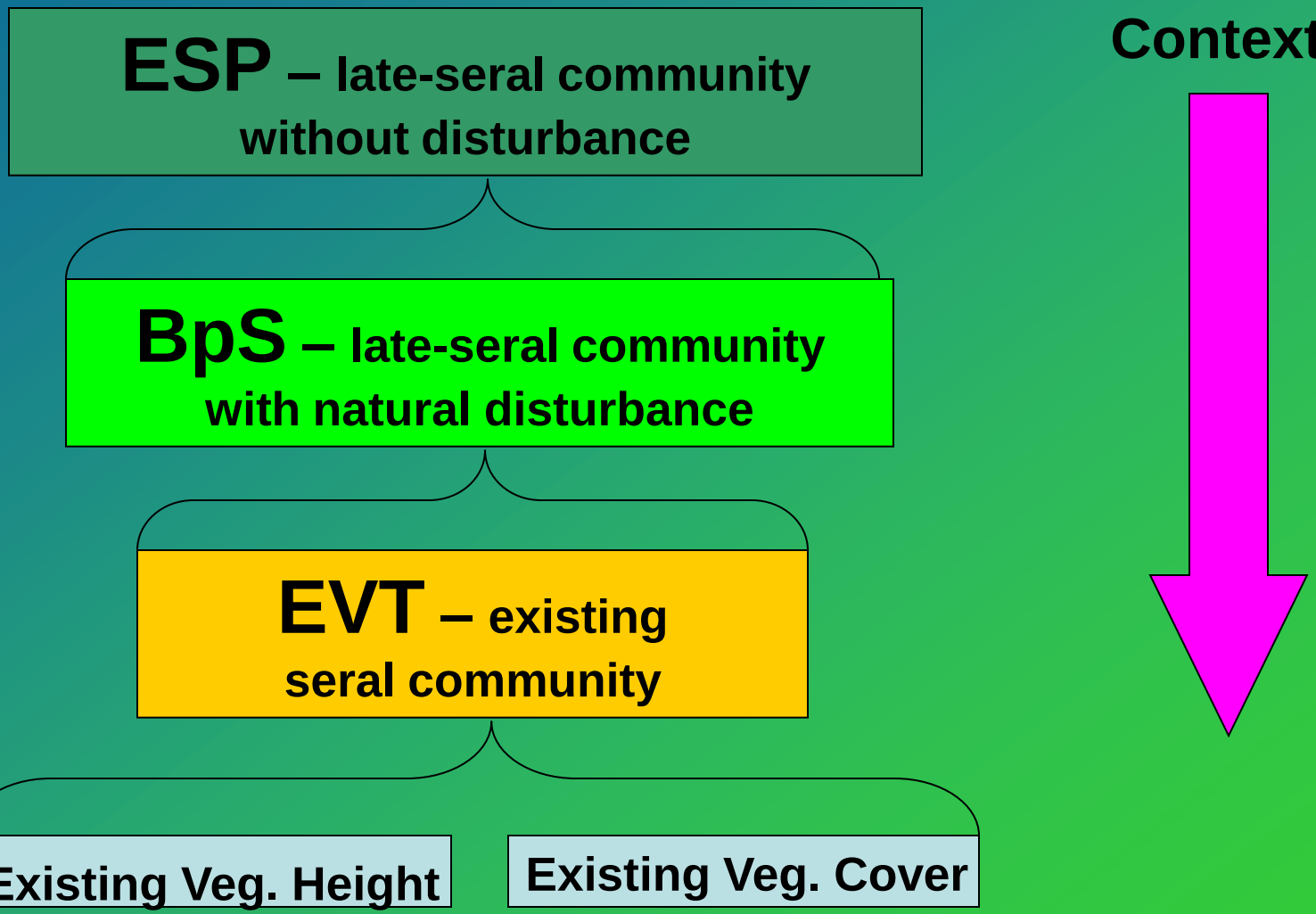
- Useful for predicting current vegetation composition
- Framework for mapping current fuel distribution and loadings
- Succession *without* disturbance

Biophysical Settings (BpS)

- Foundation for historical fire regimes modeling
- Framework for mapping departure from historical condition
- Succession *with* disturbance

In Natural Systems,
"Vegetation" Layers are Hierarchically Related

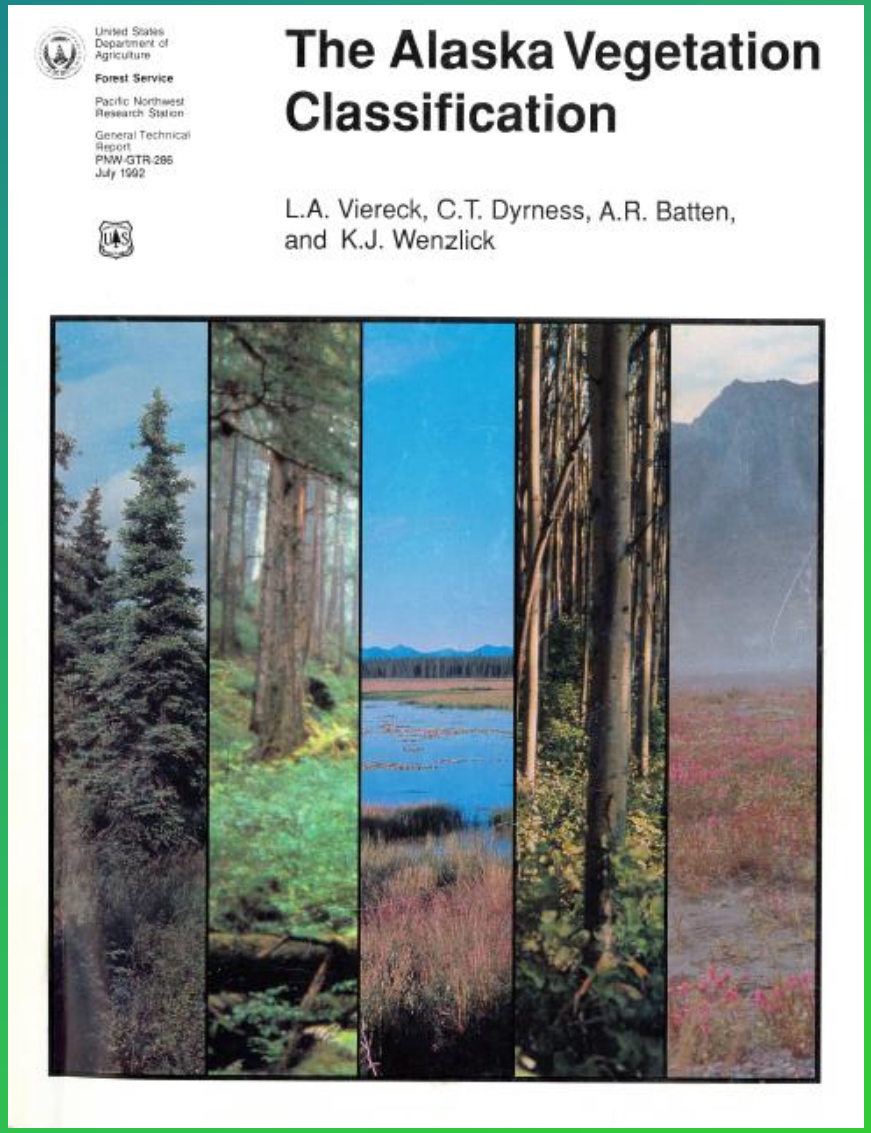


WHY NOT VIERECK?

Good existing veg classification

Lacks the necessary information for potential veg

Difficult to integrate into the LANDFIRE process



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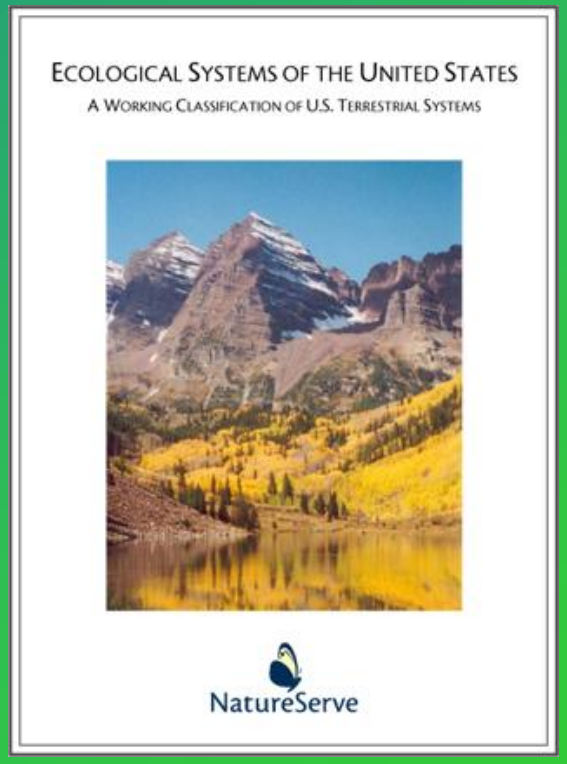
Terrestrial Ecological System

"Group of vegetative associations that tend to co-occur within landscapes with similar ecological processes, substrates, and/or environmental gradients".



Thematic Target Legend Developed with *NatureServe*

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~ NVC Class/Subclass	NVC Formation	NatureServe Ecological Systems	NVC Alliance	NVC Association
~20 units	~300 units	~600 units	~1,800 units	~5,000 units
MRLC 2000		Gap Analysis Program		
		National Park Mapping		

“Rocky Mountain Dry-Mesic Spruce-Fir Forest and Woodland”

“Inter-Mountain Basins Big Sagebrush Shrubland”

“Colorado Plateau Pinyon-Juniper Woodland”

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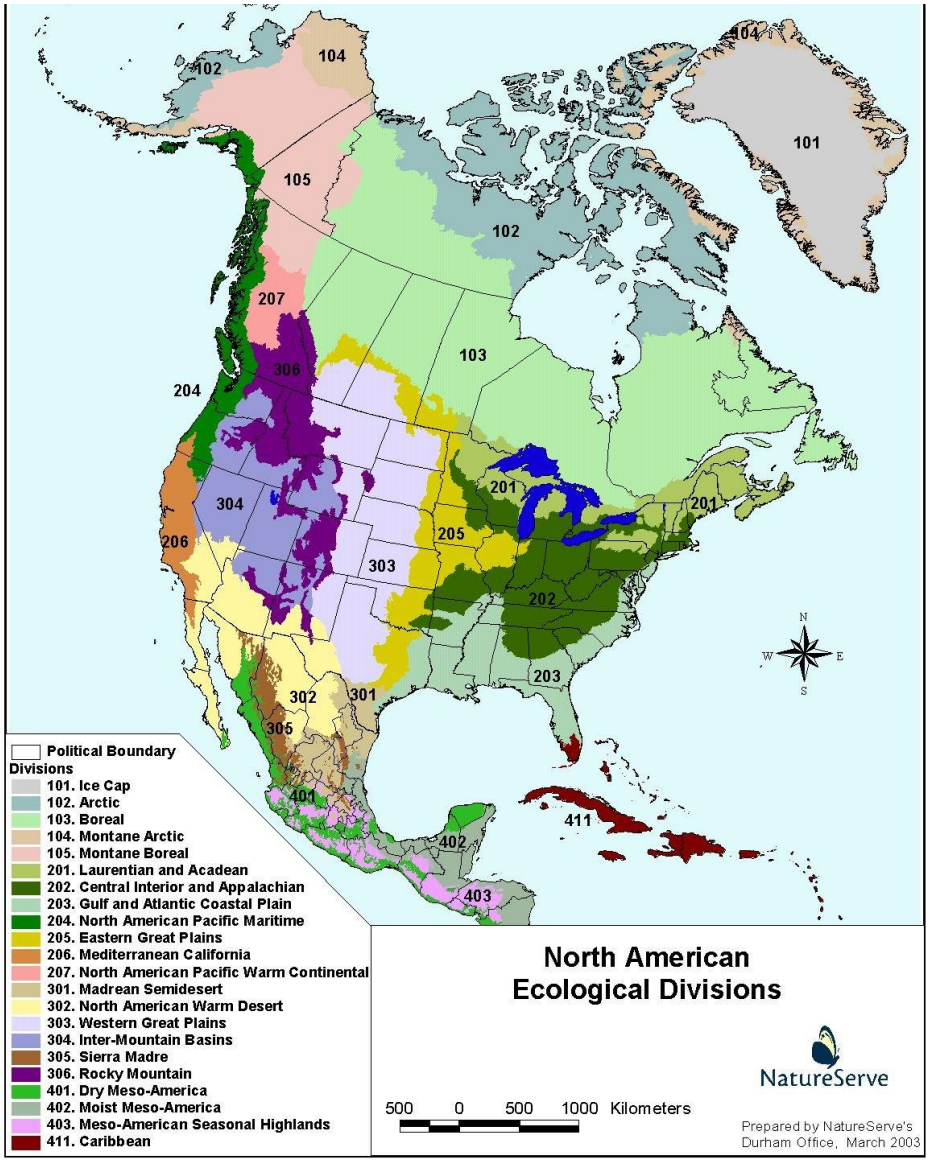

Standard Nomenclature:

1. Name of the Ecological Divisions or nested Provinces that describe the distribution of the type.
2. Characteristic vegetative composition and physionomy
3. Environmental modifiers

LANDFIRE Alaska Vegetation Map Units

- Ecological Systems
  - ~ 20 Aleutian map units
  - ~ 35 Arctic map units
  - ~ 42 Boreal map units
  - ~ 33 Pacific Maritime map units
  - ~ 8 Coastal map units

LANDFIRE Alaska Vegetation Map Units

- **National Land Cover Classes**
  - ~7 NLCD land cover/land use types
- **Ecological Systems**
  - ~ 138 map units total
  - ~ 60 wetland-riparian units
  - ~ 33 forest and woodland units
  - ~ 51 shrubland/steppe units
  - ~ 40 herbaceous units
  - ~ 14 sparsely vegetated units